

# **DRIVE DEVICE FOR A SUNSHADE CURTAIN**

## **BACKGROUND OF THE INVENTION**

### **(a) Field of the Invention**

5       The present invention relates to a drive device, and particularly to a drive device for a sunshade curtain.

### **(b) Description of the Prior Art**

      In general, a sunshade curtain is opened or closed through drawing a rope formed with the sunshade curtain by hand. However, it is  
10   inconvenient to open or close the sunshade curtain by hand in some situations. Furthermore, it needs time and physical strength to open or close the sunshade curtain by hand. Thus, it is required to open or close a sunshade curtain automatically.

## **SUMMARY OF THE INVENTION**

15       Accordingly, an object of the present invention is to provide a drive device for a sunshade curtain for automatically opening or closing the sunshade curtain.

      Further object of the present invention is to provide a drive device for a sunshade curtain which is convenient to open or close the  
20   sunshade curtain.

To achieve the above-mentioned objects, a drive device for a sunshade curtain in accordance with the present invention includes a housing with a cover attached thereto, a motor received in the housing with a driving shaft extending through the cover, a driver attached to the free end of the driving shaft, and a pair of switches movably attached to the cover at opposite sides of the driver. The switches have a pair of idlers respectively in contact with the driver at opposite sides of the driver. When a rope for opening or closing the sunshade curtain is received between the driver and the idlers, and when the drive device is turned on to drive the driver, the rotating driver draws the rope to move along the rotation direction thereof through friction. Thus, the sunshade curtain is opened or closed automatically by the drive device through controlling the rotation of the motor.

Other objects, advantages and novel features of the present invention will be drawn from the following detailed embodiments of the present invention with attached drawings, in which:

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a perspective view of a drive device for a sunshade curtain in accordance with an embodiment of the present invention;

Fig. 2 is an assembled view of Fig. 1;

Fig. 3 is a top plan view of Fig. 2 showing a rope of the sunshade curtain being assembled to the drive device;

Fig. 4 is similar to Fig. 3 but showing the rope of the sunshade curtain being assembled to the drive device in another way; and

5 Fig. 5 is a schematic elevational view showing a drive device of a sunshade curtain in accordance with another embodiment of the present invention.

### **DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring to Figs. 1-3, a drive device for a sunshade curtain of the present invention includes a motor 1, a driver 2, a pair of switches 3 and  
10 a housing 4. The motor 1 with two rotation directions has a driving shaft 11 which extending through a cover 12 attached to the housing 4. The driver 2 is fixed to the free end of the driving shaft 11. The pair of switches 3 is movably attached to the cover 12 at opposite sides of the  
15 driver 2. Each switch 3 is generally inverse L-shaped with a handle 31 at an end thereof projecting from the housing 4 and an idler 32 rotatably attached to the other end thereof. Both of the idlers 32 are in contact with the driver 2 at opposite sides of the driver 2. A pair of springs 33 are attached between the cover 12 and the switches 3 for providing  
20 resilience to the switches 3 to keep the idlers 33 in contact with the driver

2. The driver 2 has a concave peripheral surface 21 with a plurality of protrusions 22 extending therefrom.

In use, the handles 31 of the switches 3 are depressed to make the idlers 32 away from the driver 2 whereby a rope (not labeled) for opening or closing the sunshade curtain is received in the opposite sides of the concave peripheral surface 31. When the switches 3 are released, the idlers 32 are moved toward to the driver 2 by the springs 33 and abut against the rope. Thus, when the drive device is turned on to drive the driver 2, the rotating driver 2 draws the rope to move along the rotation direction thereof since the protrusions 22 and the idlers 32 provide the rope friction. It is easy to understand that one of rotation directions of the motor 1 will open the sunshade curtain and the other of the rotation directions of the motor 1 will close the sunshade curtain. Thus, the sunshade curtain is opened or closed by the drive device through controlling the rotation of the motor 1.

As shown in Fig. 4, the rope of the sunshade curtain is assembled to the drive device in another way. The rope is wound around the concave peripheral surface 21 of the driver 2 for enhancing to provide the rope friction thereby preventing idling of the driver 2.

Referring to Fig. 5, a drive device for a sunshade curtain of another

embodiment of the present invention is shown. A motor (not shown) drives a gear set 41 having two driving shafts 11. A pair of drivers 2 is attached to the driving shafts 11 respectively. An idler 32 is movably provided between the drivers 2 and in contact with the drivers 2. In use,  
5 a rope (not labeled) is assembled to opposite sides of the idler 32 and between the idler 32 and the drivers 2. When the motor is turned on, the rope is drawn by the rotating drivers 2 thereby realizing opening or closing of the sunshade curtain.

As mentioned above, the present invention provides a drive device  
10 for a sunshade curtain to automatically open or close the sunshade curtain thereby providing convenience to open or close the sunshade curtain. A remote control circuit may be used in the drive device of the present invention for remotely controlling the opening or closing of the sunshade curtain.

15 It is understood that the invention may be embodied in other forms without departing from the spirit thereof. Thus, the present examples and embodiments are to be considered in all respects as illustrative and not restrictive, and the invention is not to be limited to the details given herein.